WHAT IS CLAIMED IS:

1. A cooling assembly for an internal stator of an electric machine; said cooling assembly comprising a generally tubular body being configured and sized to be inserted inside the internal stator; said body including a top surface; said body being provided with a cooling circuit having:

an inlet;

an outlet;

at least two pair of bores provided on said top surface; each pair of bores being so configured and sized as to define a V-shaped channel; said bores being so distanced on said top surface that each said V-shaped channel intersects with at least one adjacent V-shaped channel; intersections of said V-shaped channels being closed via plugs; one of said at least two pair of bores being associated with said inlet and another of said at least two pair of bores being associated with said outlet.

2. The cooling assembly of claim 1, wherein said generally tubular body has a generally cylindrical outer surface and wherein the internal stator has a generally cylindrical inner surface.

3. The cooling assembly of claim 2 further comprising a biasing assembly so mounted to said tubular body as to bias said outer surface of said body towards the inner surface of the stator.

4. The cooling assembly of claim 3, wherein said generally tubular body has a C-shaped cross-section defining opposed surfaces; said biasing assembly being mountable to said opposed surfaces to spread them apart.

5. The cooling assembly of claim 4, wherein said biasing assembly includes first and second wedging elements interconnected by at

least one fastener; said biasing assembly being so mountable to said opposed surfaces that the fastening of said at least one fastener force the first and second wedging elements toward each other, thereby forcing said opposed surfaces apart.

6. The cooling assembly of claim 1, wherein each said at least two pair of bores include a first angled bore and a second angled bored so angled with respect to a longitudinal axis of said body and so distanced as to define said V-shaped channel.

7. The cooling assembly of claim 1, wherein said plugs used to close intersecting V-shaped channels are deformable plugs.

8. The cooling assembly of claim 1, wherein each said bores reach a bottom surface of said body; each said pair or bores including a plug provided on said bottom surface of said body to close said bores and define the V-shaped channel.

9. The cooling assembly of claim 1, wherein said body is made from material selected from the group consisting of aluminum, aluminum alloys, brass and Sintered Metal Compound.

10. A cooling assembly for an internal stator of an electric machine; said cooling assembly comprising a generally tubular body so configured and sized as to be inserted inside the internal stator; said body including a top surface provided with at least two pair of bores defining V-shaped channels; said cooling assembly further comprising plugs so inserted into said bores as to close intersections of said V-shaped channels.

11. The cooling assembly of claim 10, wherein said generally tubular body has a generally cylindrical outer surface and wherein the internal stator has a generally cylindrical inner surface.

12. The cooling assembly of claim 11 further comprising a biasing assembly so mounted to said tubular body as to bias said outer surface of said body towards the inner surface of the stator.

13. The cooling assembly of claim 12, wherein said generally tubular body has a C-shaped cross-section defining opposed surfaces; said biasing assembly being mountable to said opposed surfaces to spread them apart.

14. The cooling assembly of claim 13, wherein said biasing assembly includes first and second wedging elements interconnected by at least one fastener; said biasing assembly being so mountable to said opposed surfaces that the fastening of said at least one fastener force the first and second wedging elements toward each other, thereby forcing said opposed surfaces apart.

15. The cooling assembly of claim 10, wherein each said at least two pair of bores include a first angled bore and a second angled bored so angled with respect to a longitudinal axis of said body and so distanced as to define said V-shaped channel.

16. The cooling assembly of claim 10, wherein said plugs used to close intersecting V-shaped channels are deformable plugs.

17. The cooling assembly of claim 10, wherein each said bores reach a bottom surface of said body; each said pair or bores including a plug provided on said bottom surface of said body to close said bores and define the V-shaped channel.

18. A cooling assembly for an internal stator of an electric machine; said cooling assembly comprising a generally tubular body configured and sized to be inserted in the internal stator; said body including a top surface; said body being provided with a cooling circuit having:

an inlet provided in said top surface;

a first V-shaped channel associated with said inlet; said first V-shaped channel being defined by a first angled bore done in the top surface and a second angled bore done in the top surface;

at least one second V-shaped channel each defined by a first angled bore done in the top surface and a second angled bore done in the top surface; one of said at least one second V-shaped channel intersecting with said first V-shaped channel; said at least one second V-shaped channel intersecting with adjacent second V-shaped channels;

an outlet provided in said top surface;

a third V-shaped channel associated with said outlet; said third V-shaped channel being defined by a first angled bore done in the top surface and a second angled bore done in the top surface; said third V-shaped channel intersecting with one of said at least one second V-shaped channel;

wherein when V-shaped channels intersect, a plug is inserted at the intersection.

19. The cooling assembly of claim 18, wherein said generally tubular body has a generally cylindrical outer surface and wherein the internal stator has a generally cylindrical inner surface.

20. The cooling assembly of claim 19 further comprising a biasing assembly so mounted to said tubular body as to bias said outer surface of said body towards the inner surface of the stator.

21. The cooling assembly of claim 20, wherein said generally tubular body has a C-shaped cross-section defining opposed surfaces; said biasing assembly being mountable to said opposed surfaces to spread them apart.

22. The cooling assembly of claim 21, wherein said biasing assembly includes first and second wedging elements interconnected by at least one fastener; said biasing assembly being so mountable to said opposed surfaces that the fastening of said at least one fastener force the first and second wedging elements toward each other, thereby forcing said opposed surfaces apart.

23. The cooling assembly of claim 18, wherein said plugs used to close intersecting V-shaped channels are deformable plugs.

24. The cooling assembly of claim 18, wherein each said bores reach a bottom surface of said body; each said pair or bores including a plug provided on said bottom surface of said body to close said bores and define the V-shaped channel.